

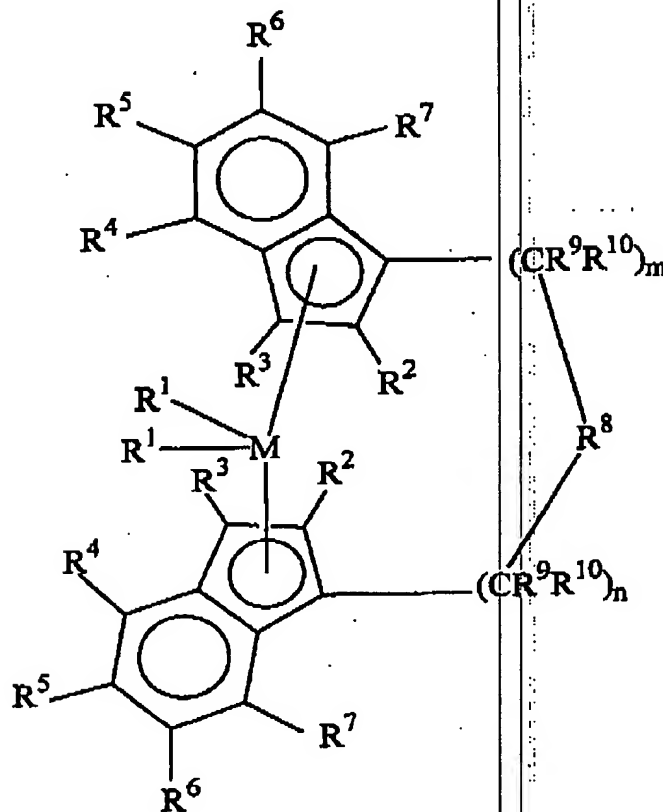
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**Listing of the Claims:**

This listing of claims will replace all prior versions and listings of claims in the application:

1. (currently amended) A process for preparing a propylene copolymer, the process comprising:

polymerizing propylene and a comonomer selected from C<sub>2</sub> and C<sub>4</sub>-C<sub>10</sub> in the presence of the product of activator and metallocene compound represented by the formula:



wherein: M is a metal of Group 4, 5, or 6 of the Periodic Table,

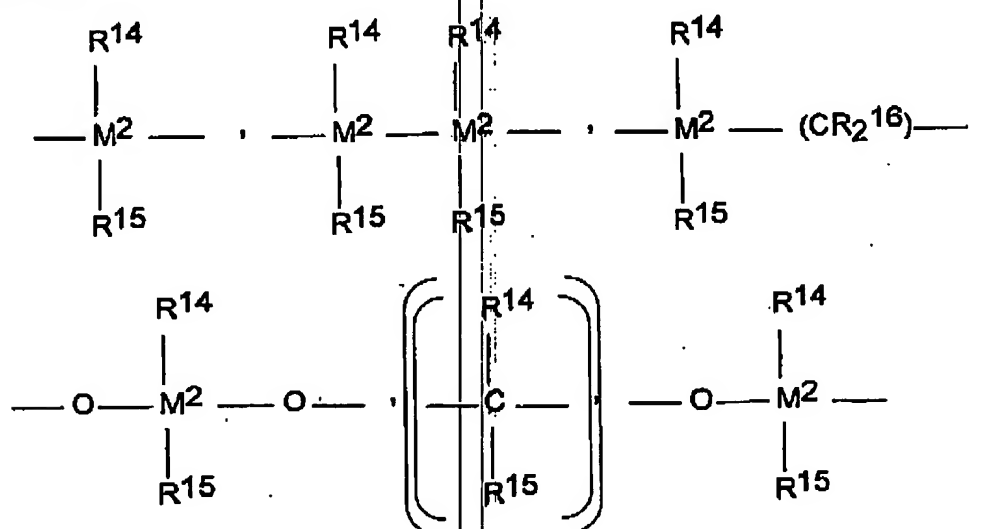
R<sup>1</sup> are identical or different, and are one of a hydrogen atom, a C<sub>1</sub>-C<sub>10</sub> alkyl group, a C<sub>1</sub>-C<sub>10</sub> alkoxy group, a C<sub>6</sub>-C<sub>10</sub> aryl group, a C<sub>6</sub>-C<sub>10</sub> aryloxy group, a C<sub>2</sub>-C<sub>10</sub> alkenyl

group, a C<sub>7</sub>-C<sub>40</sub> arylalkyl group, a C<sub>7</sub>-C<sub>40</sub> alkylaryl group, a C<sub>8</sub>-C<sub>40</sub> arylalkenyl group, a halogen atom, or a conjugated diene, said conjugated diene substituted with one or more hydrocarbyl, tri(hydrocarbyl)silyl or tri(hydrocarbyl)silylhydrocarbyl groups, and said diene having up to 30 atoms not counting hydrogen;

R<sup>2</sup> are identical or different, and are a hydrogen atom, a halogen atom, a C<sub>1</sub>-C<sub>10</sub> alkyl group, a halogenated C<sub>1</sub>-C<sub>10</sub> alkyl group, a C<sub>6</sub>-C<sub>10</sub> aryl group, a halogenated C<sub>6</sub>-C<sub>10</sub> aryl group, a C<sub>2</sub>-C<sub>10</sub> alkenyl group, a C<sub>7</sub>-C<sub>40</sub> arylalkyl group, a C<sub>8</sub>-C<sub>40</sub> arylalkenyl group, a -NR<sub>2</sub><sup>17</sup> radical, a -SR<sup>17</sup> radical, a -OR<sup>17</sup> radical, a -OSiR<sub>3</sub><sup>17</sup> radical, or a -PR<sub>2</sub><sup>17</sup> radical, wherein: R<sup>17</sup> is one of a halogen atom, a C<sub>1</sub>-C<sub>10</sub> alkyl group, or a C<sub>6</sub>-C<sub>10</sub> aryl group;

R<sup>3</sup> are as defined for R<sup>1</sup>;

R<sup>8</sup> is hydrogen or:



wherein: R<sup>14</sup>, R<sup>15</sup> and R<sup>16</sup> are identical or different, and are a hydrogen, a halogen, a C<sub>1</sub>-C<sub>20</sub> branched or linear alkyl group, a C<sub>1</sub>-C<sub>20</sub> fluoroalkyl, a silylalkyl group, a C<sub>6</sub>-C<sub>30</sub> aryl group, a C<sub>6</sub>-C<sub>30</sub> fluoroaryl group, a C<sub>1</sub>-C<sub>20</sub> alkoxy group, a C<sub>2</sub>-C<sub>20</sub> alkenyl group, a C<sub>7</sub>-C<sub>40</sub> arylalkyl group, a C<sub>8</sub>-C<sub>40</sub> arylalkenyl group, a C<sub>7</sub>-C<sub>40</sub> alkylaryl group, or R<sup>14</sup> and R<sup>15</sup>, together with the atoms binding them, form a cyclic ring;

M<sup>2</sup> is carbon;

R<sup>9</sup> and R<sup>10</sup> are identical or different, and have the meanings stated for R<sup>1</sup>;

$R^4$ ,  $R^5$ ,  $R^6$  and  $R^7$  are identical or different, and have the meanings stated for  $R^1$  provided that at least one of  $R^4$  and  $R^7$  are not hydrogen; and  $m$  and  $n$  are identical or different, and are zero, 1 or 2; wherein the propylene copolymer comprises:

- a) at least 50 wt% units derived from propylene; and
- b) a ratio of two  $g$ 's as determined by the formula:

$$\frac{g_{88-98}}{g_{20-60}} \geq 1.10$$

where the subscripts, 88-98 and 20-60, refer to the wt% of copolymer eluted in GPC-DRI, and in the numerator and the denominator,  $g$ ' is the weight average  $g$ ' over the elution range designated 88-98 and 20-60, respectively, and wherein the propylene copolymer has a weight average molecular weight of 20,000 to 1,000,000 g/mol.

- 2. (original) The process of claim 1 wherein  $M$  is zirconium or hafnium, and  $R^2$  are hydrogen.
- 3. (original) The process of claim 1 wherein  $M$  is zirconium or hafnium, and  $R^2$  and  $R^3$  are hydrogen.
- 4. (original) The process of claim 1 wherein  $R^{14}$ ,  $R^{15}$  and  $R^{16}$  are hydrogen or a  $C_1$ - $C_4$  alkyl group.
- 5. (original) The process of claim 1 wherein  $R^8$  is hydrogen, and  $m$  and  $n$  are 1.
- 6. (original) The process of claim 1 wherein  $R^5$  and  $R^6$  are hydrogen,  $R^9$  and  $R^{10}$  are hydrogen, and  $R^4$  and  $R^7$  are identical, and are one of a fluorine, a chlorine, a bromine, a  $C_1$ - $C_4$  alkyl group, or a  $C_6$ - $C_{10}$  aryl group.
- 7. (deleted)

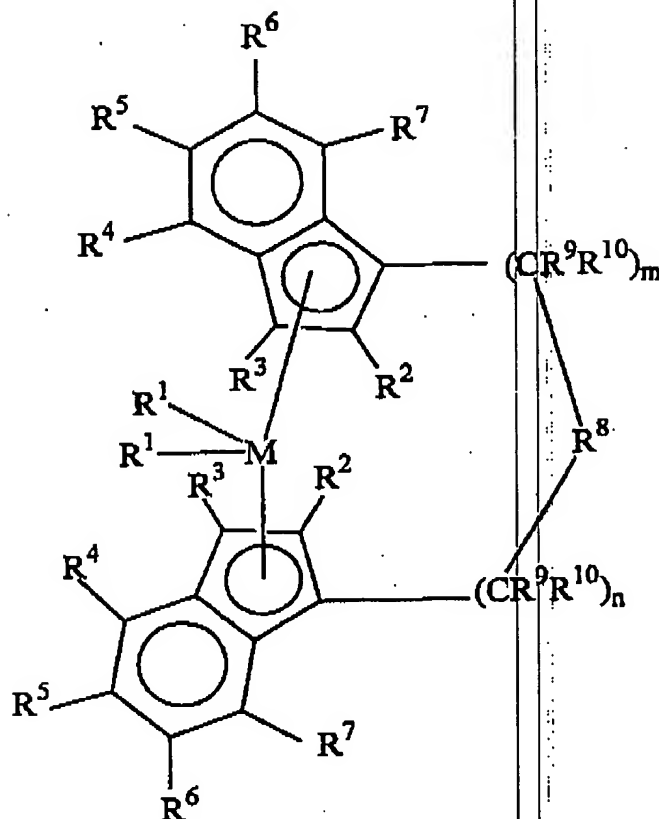
8. (original) The process of claim 1 wherein the polymer contains at least 75 weight percent propylene derived units, based on the total weight of the copolymer.

9. (original) The process of claim 1 wherein the metallocene compound is a single species.

10. (original) The process of claim 1 wherein the process is a single step polymerization process conducted in a single reactor.

11. (currently amended) A process for preparing a propylene copolymer composition comprising:

polymerizing propylene and a comonomer of ethylene selected from ~~C<sub>2</sub> and C<sub>4</sub>-C<sub>10</sub>~~ in the presence of a the product of activator and metallocene compound represented by the formula:



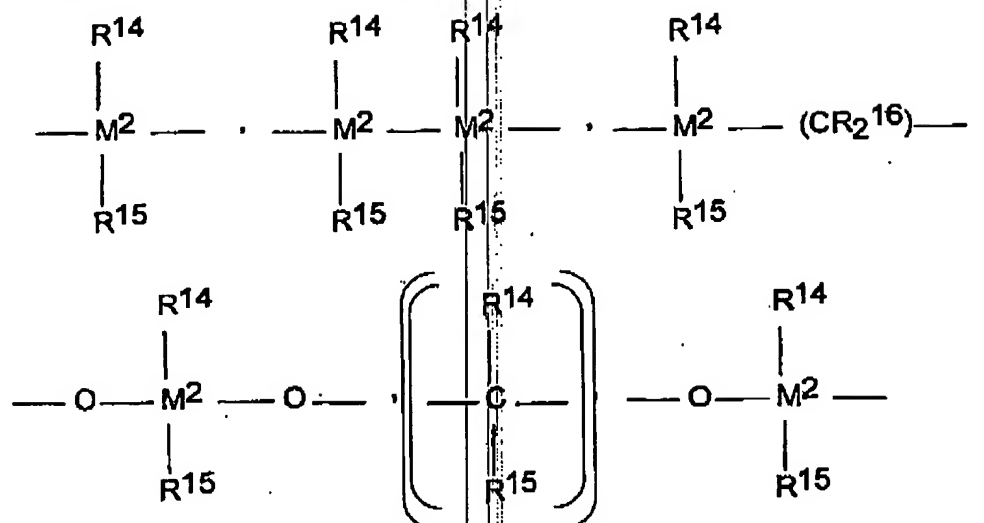
wherein:  $M$  is a metal of Group 4, 5, or 6 of the Periodic Table,

$R^1$  are identical or different, and are one of a hydrogen atom, a  $C_1$ - $C_{10}$  alkyl group, a  $C_1$ - $C_{10}$  alkoxy group, a  $C_6$ - $C_{10}$  aryl group, a  $C_6$ - $C_{10}$  aryloxy group, a  $C_2$ - $C_{10}$  alkenyl group, a  $C_7$ - $C_{10}$  arylalkyl group, a  $C_7$ - $C_{40}$  alkylaryl group, a  $C_8$ - $C_{40}$  arylalkenyl group, a halogen atom, or a conjugated diene, said conjugated diene substituted with one or more hydrocarbyl, tri(hydrocarbyl)silyl or tri(hydrocarbyl)silylhydrocarbyl groups, and said diene having up to 30 atoms not counting hydrogen;

$R^2$  are identical or different, and are a hydrogen atom, a halogen atom, a  $C_1$ - $C_{10}$  alkyl group, a halogenated  $C_1$ - $C_{10}$  alkyl group, a  $C_6$ - $C_{10}$  aryl group, a halogenated  $C_6$ - $C_{10}$  aryl group, a  $C_2$ - $C_{10}$  alkenyl group, a  $C_7$ - $C_{10}$  arylalkyl group, a  $C_8$ - $C_{40}$  arylalkenyl group, a  $-NR_2^{17}$  radical, a  $-SR^{17}$  radical, a  $-OR^{17}$  radical, a  $-OSiR_3^{17}$  radical, or a  $-PR_2^{17}$  radical, wherein:  $R^{17}$  is one of a halogen atom, a  $C_1$ - $C_{10}$  alkyl group, or a  $C_6$ - $C_{10}$  aryl group;

$R^3$  are as defined for  $R^1$ ;

$R^8$  is hydrogen or:



wherein:  $R^{14}$ ,  $R^{15}$  and  $R^{16}$  are identical or different, and are a hydrogen, a halogen, a  $C_1$ - $C_{20}$  branched or linear alkyl group, a  $C_1$ - $C_{20}$  fluoroalkyl, a silylalkyl group, a  $C_6$ - $C_{30}$  aryl group, a  $C_6$ - $C_{30}$  fluoroaryl group, a  $C_1$ - $C_{20}$  alkoxy group, a  $C_2$ - $C_{20}$  alkenyl group, a  $C_7$ - $C_{40}$  arylalkyl group, a  $C_8$ - $C_{40}$  arylalkenyl group, a  $C_7$ - $C_{40}$  alkylaryl group, or  $R^{14}$  and  $R^{15}$ , together with the atoms binding them, form a cyclic ring;

$M^2$  is carbon;

$R^9$  and  $R^{10}$  are identical or different, and have the meanings stated for  $R^1$ ;

$R^4$ ,  $R^5$ ,  $R^6$  and  $R^7$  are identical or different, and have the meanings stated for  $R^1$  provided that at least one of  $R^4$  and  $R^7$  are not hydrogen; and  $m$  and  $n$  are identical or different, and are zero, 1 or 2;

wherein the propylene copolymer comprises:

- a) at least 50 wt% units derived from propylene; and
- b) a ratio of two  $g$ 's as determined by the formula:

$$\frac{g_{88-98}}{g_{20-60}} \geq 1.10$$

where the subscripts, 88-98 and 20-60, refer to the wt% of copolymer eluted in GPC-DRI, and in the numerator and the denominator,  $g$ ' is the weight average  $g$ ' over the

elution range designated 88-98 and 20-60, respectively, and wherein the propylene copolymer has a weight average molecular weight of 20,000 to 1,000,000 g/mol.

12. (original) The process of claim 11 wherein M is zirconium or hafnium and wherein R<sup>2</sup> are identical or different C<sub>1</sub>-C<sub>4</sub> alkyl groups.
13. (original) The process of claim 11 wherein M is zirconium or hafnium, wherein R<sup>2</sup> are identical C<sub>1</sub>-C<sub>4</sub> alkyl groups, and wherein R<sup>3</sup> are hydrogen.
14. (original) The process of claim 11 wherein R<sup>14</sup>, R<sup>15</sup> and R<sup>16</sup> are identical and are a C<sub>1</sub>-C<sub>4</sub> alkyl group.
15. (original) The process of claim 11 wherein R<sup>8</sup> is hydrogen, and m and n are 1.
16. (original) The process of claim 11 wherein R<sup>5</sup> and R<sup>6</sup> are hydrogen, R<sup>9</sup> and R<sup>10</sup> are hydrogen, and R<sup>4</sup> and R<sup>7</sup> are identical and are a fluorine, a chlorine a bromine, a C<sub>1</sub>-C<sub>4</sub> alkyl group, or a C<sub>6</sub>-C<sub>10</sub> aryl group.
17. (deleted)
18. (original) The process of claim 11 wherein the composition contains at least 75 weight percent propylene derived units based on the total weight of the composition.
19. (original) The process of claim 11 wherein the metallocene compound is a single species.
20. (original) The process of claim 11 wherein the process is a single step polymerization process conducted in a single reactor.
21. (original) A propylene copolymer produced by the process of claim 1.

22. (original) A propylene copolymer composition produced by the process of claim 11.

23. (currently amended) The propylene copolymer of claim 21, comprising:

- a) ~~at least 50 wt% units derived from propylene; and~~
- b) ~~a ratio of two g's as determined by the formula:~~

$$\frac{g'_{88-98}}{g'_{20-60}} > 1.10$$

~~where the subscripts, 88-98 and 20-60, refer to the wt% of copolymer eluted in GPC-DRI, and in the numerator and the denominator, g' is the weight average g' over the elution range designated 88-98 and 20-60, respectively, wherein the ratio of two g's is equal to or greater than 1.20.~~

24. (original) The propylene copolymer of claim 23 wherein the ratio of two g's is equal to or greater than 1.30.

25. (original) The propylene copolymer of claim 23 having from 2 wt% to 28 wt% comonomer derived units, based on the total weight of the copolymer.

26. (original) The propylene copolymer of claim 23 having from 2 wt% to 28 wt% ethylene derived units, based on the total weight of the copolymer.

27. (original) The propylene copolymer of claim 23 having from 6 wt% to 28 wt% comonomer derived units, based on the total weight of the copolymer.

28. (original) The propylene copolymer of claim 23 having from 6 wt% to 28 wt% ethylene derived units, based on the total weight of the copolymer.

29. (withdrawn) A propylene copolymer comprising:



- a) at least 50 wt% units derived from propylene, and from 2 wt% to 28 wt% units derived from ethylene, based on the total weight of the copolymer; and
- b) a ratio of two g's as determined by the formula:

$$\frac{g_{88-98}}{g_{20-60}} \geq 1.10$$

where the subscripts, 88-98 and 20-60, refer to the wt% of copolymer eluted in GPC-DRI, and in the numerator and the denominator, g' is the weight average g' over the elution range designated 88-98 and 20-60, respectively.

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